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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,866	07/22/2003	Yoshihiro Kato	010986.52582US	6399

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EXAMINER

LUND, JEFFRIE ROBERT

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/623,866

Applicant(s)

KATO ET AL.

Examiner

Jeffrie R. Lund

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 13-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-8, and 10-12, drawn to a showerhead in a processing system, classified in class 156, subclass 345.34.
  - II. Claim 9, drawn to method of delivering a gas, classified in class 137, subclass 1+.
  - III. Claims 13-18, drawn to a showerhead in a processing system with two gas feeds and a controller, classified in class 156, subclass 345.26.
  - IV. Claim 19, drawn to a coating method, classified in class 427, subclass 248.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Groups II and IV, and Groups I and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as an etching method.
3. Inventions of Group I and Group III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of

operation, different functions, and different effects.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Christopher McWhinney on June 20, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-8, and 10-12. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9 and 13-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Inventions of Group II and Group IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation, different functions, and different effects.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### ***Priority***

7. The present application is a continuation-in-part of PCT/JP02/00429 filed January 22, 2002 and claimed priority to Japanese Patent Application 2001-14011 filed

January 23, 2001. Since the parent application is not available to the Examiner to determine what matter was added as part of the continuation, the Examiner has reviewed the application assuming a priority date of July 22, 2003.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-8, and 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 10 both contain the limitation "in a direction approximately horizontal to a major surface of said supply plate" which renders them indefinite in that "horizontal" refers to the surface of the earth not to the major surface of the supply plate. If the supply plate was mounted vertically the direction would be vertical not horizontal. The examiner recommends changing "approximately horizontal to a major surface" to --approximately parallel to a major surface--.

Claim 4 does not particularly point out and distinctly claim the subject matter of the invention, specifically, it is not clear what "itself" in line 3 refers to, if the "through holes" of claim 4 are the same "through holes" of claim 1, and what specifically is "led to the other side" in line 4.

Claim 8 does not particularly point out and distinctly claim the subject matter of the invention, specifically, it is not clear what specifically is led in the limitation "way as to be led" (line 2).

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Claim 11 recites the limitation "said plurality of liner holes" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 does not particularly point out and distinctly claim the subject matter of the invention, specifically, it is not clear what the limitation "at different positions in a direction of thickness" means.

Claim 12 is indifferent in that claim 12 depends from claim 7 which requires "a plurality of linear holes communicating with one another" and claim 12 requires that "said plurality of linear holes respectively constitute gas flow passages independent from each other". It is not possible for the plurality of linear holes to communicate with each other and to be independent from each other.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-6, and 10 are rejected under 35 U.S.C. 102(b) as being anticipate by Dhindsa et al, US Patent 6,245,192 B1.

Dhindsa et al teaches a processing system that includes: a chamber; a gas supply plate 26, which has a plurality of gas holes 54, and supplies a process gas into

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said chamber through the gas holes; a first diffusion portion which diffuses the gas parallel (horizontal) to a major surface and includes a plurality of linear grooves 70 or 74 formed in one side of a disk-like member 56A or 56B which are in communication with each other and include through holes; a second diffusion portion which leads gas diffused by the first diffusion portion to the gas holes and includes a groove 88 in one side of a disk-like member which forms a hollow portion, can be formed on a single disk-like member with the first diffusion portion (see disk 56B), and includes a partition member 886 which separates the hollow portion into a plurality of areas. (Entire document, specifically, figures 4-6)

12. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipate by Thomas, US Patent 5,266,153.

Thomas teaches a processing system that includes: a chamber 200; a gas supply plate 202, which has a plurality of gas holes 210, and supplies a process gas into said chamber through the gas holes; a first diffusion portion (the part of 208 above the electrode 216) which diffuses the gas parallel (horizontal) to a major surface; and a second diffusion portion (the part of 208 below the electrode 216) which leads gas diffused by the first diffusion portion to the gas. (Figure 2)

13. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipate by Zhao et al, US Patent, 5,558,717.

Zhao et al teaches a processing system that includes: a chamber 141; a gas supply plate 202, which has a plurality of gas holes 121, and supplies a process gas into said chamber through the gas holes; a first diffusion portion (the part above the

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baffle plate 124) which diffuses the gas parallel (horizontal) to a major surface; and a second diffusion portion (the part below the baffle plate 124) which leads gas diffused by the first diffusion portion to the gas. (Figure 2)

14. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipate by Dunham, US Patent 6,206,972 B1.

Dunham teaches a processing system that includes: a chamber; a gas supply plate 9, which has a plurality of gas holes 31, and supplies a process gas into said chamber through the gas holes; a first diffusion portion 23 which diffuses the gas parallel (horizontal) to a major surface; and a second diffusion portion 27 which leads gas diffused by the first diffusion portion to the gas. (Entire document)

15. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipate by Hao et al, US Patent 6,415,736 B1.

Hao et al teaches a processing system that includes: a chamber; a gas supply plate 26, which has a plurality of gas holes 28, and supplies a process gas into said chamber through the gas holes; a first diffusion portion 24 which diffuses the gas parallel (horizontal) to a major surface; and a second diffusion portion 24A which leads gas diffused by the first diffusion portion to the gas. (Entire document)

16. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipate by Hytros et al, US Patent Application Number 2003/0124842 A1.

Hytros et al teaches a processing system that includes: a chamber 128; a gas supply plate 130, which has a plurality of gas holes 174, and supplies a process gas into said chamber through the gas holes; a first diffusion portion 152 which diffuses the



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gas parallel (horizontal) to a major surface; and a second diffusion portion 170 which leads gas diffused by the first diffusion portion to the gas. (Figures 2, 4-6)

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 7, 8, 11, and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Dhindsa et al, US Patent 6,245,192 B1, in view of Fujikawa et al, US Patent 5,595,606.

Dhindsa et al was discussed above.

Dhindsa et al differs from the present invention in that Dhindsa et al does not teach that the first diffusion portion is a plurality of linear holes formed by boring and sealing the end portion of each hole.

Fujikawa et al teaches a showerhead that includes a first diffusion portion 52, 54 that includes a plurality of linear holes, and a second diffusion portion 80, 82. The plurality of linear holes is made by boring the holes and sealing the ends. (Figures 1 and 2, column 6 lines 47-55)

The motivation for making the linear grooves of Dhindsa et al linear holes is to provide an alternate means of making the apparatus of Dhindsa et al. Furthermore, the linear holes do not require a second sealing plate, which makes the apparatus easier to assemble and maintain.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the linear grooves of Dhindsa et al to linear holes, as taught by Fujikawa et al.

### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention. The cited art contains patents that could be used to reject the claims under 35 USC § 102 or 103. These rejections have not been made because they do not provide any additional or different teachings, and if they were applied, would have resulted in an undue multiplication of references. (See MPEP 707.07(g))

21. The following are suggested formats for either a Certificate of Mailing or

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Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**JEFFRIE R. LUND**  
**PRIMARY EXAMINER**